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ABSTRACT

Theorists have traditionally described motivation in terms of approach and avoidance tendencies. In contrast, goal orientation research has focused primarily on two approach goals: demonstrating ability (performance-approach) and developing ability (task). A scale to assess the goal of avoiding the demonstration of lack of ability (performance-avoid) was included with scales assessing approach goals in a survey given to 703 sixth graders. Factor analysis supported the differentiation among the three scales. The performance scales were moderately positively correlated and exhibited low correlations with the task scale. With all three goals in regression equations, task goals predicted academic efficacy, self-regulated learning, and lower levels of avoiding seeking academic help in the classroom. Performance-avoid goals negatively predicted academic efficacy and positively predicted avoiding seeking help and test anxiety. Performance-approach goals did not emerge as the most significant predictor of any of these educationally relevant outcomes. An appendix presents the test items. (Contains 5 tables and 40 references.) (Author/SLD)

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Avoiding the Demonstration of Lack of Ability: An Under-Explored Aspect of Goal Theory

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Abstract

Traditionally, theorists have described motivation in terms of approach and avoidance tendencies. In contrast, goal orientation research has focused primarily on two approach goals: demonstrating ability (performance-approach) and developing ability (task). A scale to assess the goal of avoiding the demonstration of lack of ability (performance-avoid) was included with scales assessing approach goals in a survey given to 703 sixth graders. Factor analysis supported the differentiation among the three scales. The performance scales were moderately positively correlated and exhibited low correlations with the task scale. With all three goals in regression equations, task goals predicted academic efficacy, self-regulated learning, and lower levels of avoiding seeking academic help in the classroom. Performance-avoid goals negatively predicted academic efficacy and positively predicted avoiding seeking help and test anxiety. Performance-approach goals did not emerge as the most significant predictor of any of these educationally relevant outcomes.

Avoiding the Demonstration of Lack of Ability:
An Under-Explored Aspect of Goal Theory

In an invited address on the history of motivational research in education, Weiner (1990) described the current dominance of cognitive approaches to motivation, and pointed to goal orientation theory as "a major new direction, one pulling together different aspects of achievement research" (p.629). Goal orientation theory is a qualitative rather than a quantitative conception of motivation (Ames, 1987). Rather than focusing on the level of motivation (i.e., high effort, low interest), the focus is on the goals or purposes that are perceived for achievement behavior. These goals provide the framework within which individuals interpret and react to events and result in different patterns of affect, cognition, and behavior (Dweck & Leggett, 1988; Elliott & Dweck, 1988). Two achievement goals have received the most attention: the goal to develop and improve ability (referred to in this study as a task goal orientation), and the goal to demonstrate and prove ability (referred to in this study as a performance-approach goal orientation)[1].

These two achievement goals are conceptualized as "approach" motivational tendencies (e.g., Nicholls, Patashnick, Cheung, Thorkildsen, & Lauer, 1989, p.188). Traditionally, however, theorists have described motivation in terms of both approach and avoidance tendencies (e.g., Atkinson, 1957; Lewin, Dembo, Festinger, & Sears, 1944; McClelland, 1951). Individuals may be motivated by the desire to attain success or to avoid failure. For some, the goal of avoiding looking stupid or avoiding negative judgments from others may be dominant. However, the goal to avoid the demonstration of lack of ability has not played a major role in studies using a goal theory framework. In their early work, Nicholls and his colleagues (e.g., Nicholls et al., 1989) developed a two item scale to assess the goal of avoiding looking stupid or dumb, which they labeled "avoid inferiority." However, factor analysis indicated that these items loaded with the items assessing the goal to demonstrate superiority, an approach goal. Accordingly, they

[1] These goals have been referred to as task and ego (e.g., Nicholls, 1989), learning and performance (e.g., Dweck, 1986), and mastery and performance (e.g., Ames, 1987).

combined items from the two scales and labeled it "ego-orientation." In subsequent studies, the items assessing "avoid inferiority" were dropped from the ego orientation scale.[2]

In a number of studies by Nicholls and his colleagues (e.g., Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990; Nolen, 1988; Nolen & Haladyna, 1990a; 1990b; Thorkildsen, 1988), three goal orientations were assessed: task, ego, and work avoidance. The goal of avoiding work is conceptually distinct from the goal of avoiding the demonstration of lack of ability. Work avoidance goals are aimed at effort reduction; whereas the goal to avoid the demonstration of lack of ability is conceptualized as "striving to avoid incompetence" (Elliott & Harackiewicz, 1996, p.461). Covington (1992), in his theory of self worth, describes students who are "failure acceptors." These students are passive and avoid school work. He is particularly interested in the behaviors of a different group of students; those who strive to avoid being seen as unable. These students are active in their use of strategies to prevent "looking stupid."

Recently, Elliott and Harackiewicz (1996) conducted two laboratory studies in which they manipulated both approach and avoidance goal orientations and found evidence of the predictive utility of this conceptualization. In this study, we examine both the avoidance and approach components of achievement goals in the field with a sample of sixth grade middle school students in mathematics classrooms. We situate this study in mathematics because middle school students typically attend several different classes each day, with different subject matters and teachers. As pointed out by Stodolsky and her colleagues (e.g., Stodolsky, Salk, & Glaessner, 1991), instructional experiences in different subject matter areas "are a central ingredient in the development of patterns of beliefs and attitudes" (p.11). We developed a scale to measure the avoidance component of performance goals (referred to in this study as a performance-avoid goal orientation) and used it with scales previously developed to measure task goals and the approach component of performance goals. We considered the relations among these three goal orientations,

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[2]In some studies, items assessing the goal of social approval (e.g., "It was important to me that the teacher thought I did a good job") were added to form an "Ego and Social Orientation Scale (e.g., Meece, Blumenfeld, & Hoyle; 1988; Nicholls, Patashnick, & Nolen, 1985). However, it appears that Nicholls later regretted this stating that "On reflection, these social orientation items are more ambiguous than desirable. The nature of social orientations is a topic in its own right and we deal with it poorly in that study." (Nicholls, Cheung, Lauer, and Patashnick, 1989, p.70).

group differences in each of these orientations, and the relationship of each of these goal orientations to educationally relevant outcomes.

Relations among Goal Orientations

In the studies conducted by Nicholls and his colleagues, task orientation and ego orientation were positively related, but at levels low enough to prompt the statement that they were "more or less orthogonal." Our studies (Kaplan & Maehr, 1996; Midgley, Anderman, & Hicks, 1995; Midgley & Urdan, 1995; Roeser, Midgley, & Urdan, 1996; Ryan, Hicks, & Midgley, 1996) showed similar low positive correlations between task and performance-approach goals. Thus, in the current study we expect that task and performance-approach goals will be orthogonal. Similarly, we do not expect task goals and performance-avoid goals to be related. In contrast, since both the avoidance and approach components of performance goals are concerned with others' views of one's ability, we expect that these orientations will be positively correlated.

Group Differences in Goal Orientations

Few studies have examined differences in goal orientation by gender or race (Pintrich & Schunk, 1996). In our previous studies, when gender differences emerged, boys espoused performance-approach goals more than did girls (Anderman & Young, 1994; Kaplan & Maehr, 1996; Midgley & Urdan, 1995; Roeser et al., 1996; Ryan et al., 1996). When gender differences emerged in task goals, girls espoused these goals more than did boys (Anderman & Young, 1994; Kaplan & Maehr, 1996). In two studies the nature of the sample allowed us to assess differences between African American and European American students' task and performance-approach goals. No significant differences by race emerged in one study (Midgley, Arunkumar, & Urdan, 1996). African Americans were more likely to hold task goals than were European Americans in the other study (Kaplan & Maehr, 1996). In regard to differences by achievement level, in most studies task goals were positively correlated with grade point average (GPA) (Kaplan & Maehr, 1996; Midgley & Urdan, 1995; Roeser et al., 1996). However, in some studies performance-approach goals were positively related to GPA (Midgley & Urdan, 1995; Roeser et al., 1996), and

in other studies they were negatively related to GPA (e.g., Kaplan & Maehr, 1996). In the current study, we examine the role of gender, race, and GPA in each of the three goal orientations.

Goal Orientations and Educationally Relevant Beliefs and Behaviors

We have chosen several different beliefs and behaviors to examine in relation to each of the three goal orientations. Goal orientation research suggests that a task goal orientation is associated with adaptive educational outcomes whereas a performance goal orientation is associated with less adaptive outcomes. To represent adaptive outcomes, we included perceived academic efficacy and the reported use of self-regulated learning strategies. Test anxiety and avoiding seeking academic help in the classroom when needed were selected to represent maladaptive outcomes.

Task goals. When oriented to task goals, students define success as mastering something new and they see effort as contributing to success. Task goals have been found to be positively related to perceptions of academic efficacy (Anderman & Young, 1994; Midgley et al., 1995; Midgley & Urdan, 1995; Roeser et al., 1996; Schunk, 1996; Wolters, Yu, & Pintrich, 1996) and to the use of effective learning strategies (Ames & Archer, 1988; Anderman & Young, 1994; Meece, Blumenfeld, & Hoyle, 1988; Nicholls et al., 1989; Nolen, 1988; Wolters et al., 1996). Although the investigation of the relation between goal orientation and help-seeking strategies is very recent, Ryan and Pintrich (in press) found that a task goal orientation was a strong positive predictor of adaptive help-seeking and a strong negative predictor of avoiding seeking help when needed. Wolters and his colleagues (1996) found that a task goal orientation was unrelated to test anxiety.

Performance-approach goals. When oriented to demonstrating ability relative to others, the self becomes salient rather than the task. Past research examining performance-approach goals and educational outcomes has revealed a somewhat inconsistent pattern of results. A number of studies have found a positive relation between performance-approach goals and perceived academic efficacy (e.g., Midgley et al., 1995; Midgley & Urdan, 1995, Wolters et al., 1996). In contrast, Anderman and Young (1994) found a negative correlation between performance-approach goals and perceived academic efficacy both generally and specific to the science domain. Anderman and

Young (1994) found that a performance-approach orientation was negatively correlated with the use of "deep" cognitive strategies in science, and positively correlated with surface level strategies. Nolen (1988) and Meece and her colleagues (1988) also found that an ego orientation was related positively to surface level strategies but they did not find a relation with strategies requiring the deep processing of information. Performance-approach goals were unrelated to test anxiety in the Wolters et al. (1996) study. Ryan and Pintrich (in press) found that an orientation to performance-approach goals positively predicted avoiding seeking academic help in the classroom, but was unrelated to adaptive help-seeking. It is our hope that the somewhat contradictory results from these studies, which included only the approach dimension of performance goals, will be clarified by the approach/avoidance distinction that prevails in this paper.

Performance-avoidance goals. In the experimental study conducted by Elliott and Harackiewicz (1995) that included both the approach and avoidance dimensions of performance goals, only performance goals grounded in avoidance undermined intrinsic motivation. The avoidance dimension of performance goals may be more powerful than is the approach dimension in predicting outcomes. It makes sense that students who want to avoid looking unable will be reluctant to ask for help in the classroom if they see this as a low ability cue (Butler & Neuman, 1995). They may also feel anxious about tests and evaluation, fearing that they might reveal a lack of ability. They may also feel less positively about their ability to master tasks (efficacy).

In summary, we make the following hypotheses:

Task, performance-approach, and performance-avoidance scales will factor separately;

Task goals will be orthogonal to both components of performance goals, whereas performance-approach and performance-avoidance goals will be positively correlated;

A task goal orientation will be a positive predictor of academic efficacy and the use of self-regulated learning strategies, and a negative predictor of avoiding seeking help.

A performance-avoid goal orientation will be a negative predictor of perceived academic efficacy and the use of self-regulated learning strategies, and a positive predictor of test anxiety and avoiding seeking help in the classroom .

A performance-approach goal orientation will be a positive predictor of test anxiety and avoiding seeking help in the classroom.

Method

This study is part of a larger study examining changes in students' patterns of learning as they move from fifth to ninth grade. The sample was recruited when students were in the fifth grade. Parental permission was required and 82% of the fifth grade students in 39 classrooms in 21 elementary schools received permission. These schools were located in four ethnically and economically diverse communities in southeastern Michigan. Students made a transition to ten middle schools when they entered sixth grade. The data for the current study were collected during the spring of 1996, when students were in the sixth grade in middle school.

The current study included 703 sixth grade students (49% male and 51% female; 43% African-American, 47% European-American, and 10% other). Surveys were administered in school in two sessions by trained research assistants. Administrators read instructions and items aloud while students read along and responded. Students were told that this was not a test and there were no right or wrong answers. They were assured that their answers would be kept confidential and that no one at home or at school would have access to the information.

Measures

The items in the surveys were specific to the math domain[3] and used a 5-point scale (1 = "not at all true" to 5 = "very true"). Scales assessing an orientation to task goals and to performance-approach goals were taken from the Patterns of Adaptive Learning Survey (PALS) (Midgley, Maehr, Hicks, Roeser, Urdan, Anderman, & Kaplan, 1996). These scales have proven to be reliable and valid in a number of studies with both upper elementary and middle school students (e.g., Midgley et al., 1996; Roeser et al., 1996; Ryan et al., 1996). Sample items and

[3]Scales were included on the surveys to assess both math specific and general goals (e.g., "One of my main goals in math is to avoid looking like I can't do my work;" "One of my main goals in my classes is to avoid looking like I can't do my work." In both cases the three goal orientations factored separately. The alpha coefficients were somewhat higher in math than for classrooms in general.

Cronbach's alpha coefficients for these scales are included in the Appendix. An original scale was developed to assess students' orientation to avoiding the demonstration of lack of ability (performance-avoid goals) in mathematics (see Appendix for all the items in this scale).

The scale used to assess academic efficacy was also taken from PALS and has been used in other studies. The items are domain specific and situated in the classroom. The scale used to measure self-regulated learning was adapted from measures developed by Zimmerman and Martinez-Pons (1988) and Pintrich, Smith, Garcia, and McKeachie (1991). The items are specific to the math domain and to students' current math class. Items developed by Arbreton (1993) and Ryan and Pintrich (in press) and made specific to mathematics were used to assess avoidance of help-seeking when needed. A measure of test anxiety in mathematics was adapted from the Motivated Strategies for Learning Questionnaire - MSLQ (Pintrich et al., 1991). Academic achievement (GPA) was computed based on students' final grade in math in the previous year. Grades were collected from school records and were coded E = 1 through A+ = 13.

Analysis

To conduct factor analysis, the full sample (N = 703) was randomly split into two subsamples. Exploratory factor analysis was conducted using one sub-sample (N = 342), and confirmatory factor analyses was conducted on the second subsample (N = 361). In analyses looking at the relations among variables, and the predictive relations between the independent and dependent variables, the role of both race and prior academic achievement were of interest. In one school we were unable to gather information about students' prior achievement from school records; therefore, the 113 students in this school were dropped from further analyses. In addition, because of the relatively small numbers of Asian-Americans (10), Hispanics (53), and Native Americans (2) in the sample, only African American and European American students were included in these analyses, leaving a sample size of 525. Of this total, there were 296 African-Americans, 229 European-Americans; 258 males, and 267 females.

ANCOVA was used to test for differences by race and gender on each of the goal orientation scales, using level of prior achievement as a covariate. Correlations among the

variables were determined and regression analyses were conducted. Four separate hierarchical regressions were conducted, one for each outcome -- self-regulation, self-efficacy, test anxiety, and avoiding help-seeking. In the first step of these regressions, variables representing gender, race, and prior academic achievement were entered. In the second step, the three achievement goal orientations -- task, performance-approach, and performance-avoid were entered.

Results

Using one subsample, we conducted an exploratory factor analysis with communalities on the diagonal and oblique rotation. After rotation, items from the three scales formed separate factors, as hypothesized. Table 1 gives the factor loadings of items on the three achievement goal scales (EFA). Items loaded on separate factors with values ranging from .68 to .87. The highest loading for any item on another factor was .11. The three factors accounted for 61.3% of the variance in the items. A confirmatory factor analysis using LISREL 7 with maximum likelihood was conducted on the second half of the randomly split sample. The standardized solution factor loadings are presented in Table 1 (CFA). All factor loadings had significant t-values at levels of $p < .05$. The model had a chi-square of 219.30 with 101 degrees of freedom. The goodness of fit index was .94 and the adjusted goodness of fit was .90. The results confirmed our hypothesis of three distinct factors.

The Cronbach's alpha coefficient for the whole sample was .84 for each of the three scales. Separate exploratory factor analyses were then conducted with females, males, African-Americans, and European Americans. In each case, items from the three scales formed separate factors after rotation. When the sample was split by race and gender, the Cronbach's alpha coefficients remained high, ranging from .83 to .86 (See Table 2). Descriptive statistics and correlations among the items in the performance-avoid scale are presented in Table 3. Descriptive statistics and correlations among the variables in the study are presented in Table 4. Task goals were orthogonal to performance-approach goals ($r = .04$) and performance-avoidance goals ($r = .01$). Performance-approach and avoid goals were moderately positively related ($r = .56$).

An analysis of covariance was conducted for each goal orientation scale to examine differences by race and gender, with prior achievement as a covariate. A main effect for the covariate, prior achievement, was significant for performance-avoid and performance-approach goals. Students with lower prior achievement were more likely to espouse performance-avoid [$F(1,486) = 7.89$, $p = .005$] goals and performance-approach goals [$F(1,485) = 4.11$, $p = .043$] than were students with higher prior achievement . A significant main effect was also found for gender in performance-approach goals [$F(1,485) = 3.96$, $p = .047$]. Males ($M = 2.93$, $SD = 1.12$) reported higher support for performance-approach goals than did females ($M = 2.70$, $SD = 1.15$). One significant interaction effect was found. Gender moderated the relationship between task goals and race [$F(1,487) = 8.00$, $p = .005$]. One way analysis of variance with a Tukey post hoc test indicated that T-tests indicated that African-American females ($M = 3.52$, $SD = 1.05$) reported significantly higher levels of task goal orientation than did African-American males ($M = 3.17$, $SD = 1.06$) and European-American females ($M = 3.05$, $SD = 1.07$). European-American males ($M = 3.26$, $SD = 1.05$) were not distinguised from any of the other groups at a significant level.

Separate hierarchical regressions were conducted for each of the dependent variables (see Table 5). At the first step, prior achievement, gender, and race were used to predict the outcome variables. For each of the dependent variables, these variables accounted for 4% or less of the explained variance. The three goal orientations were entered at the second step. Only prior achievement in math as a predictor of self-efficacy, avoiding help- seeking, and test anxiety remained significant at the second step of the regression. For each of the outcomes, the three goal orientations added a significant proportion of the variance, ranging from 16% for test anxiety to 39% for self-regulated learning. The regression results also allowed for the examination of the relative predictive power of each of the three goal orientations. As predicted, a task goal orientation positively predicted academic efficacy and reports of the use of self-regulated learning strategies and negatively predicted avoiding seeking help in the classroom when needed, when controlling for the other goal orientations. We also hypothesized that a performance-avoid goal

orientation would be a negative predictor of perceived academic efficacy and reports of the use of self-regulated learning strategies, and a positive predictor of avoiding seeking help in the classroom when needed and test anxiety. The results confirmed that espousing performance-avoid goals was a moderate negative predictor of self-efficacy and a positive predictor of both avoiding help seeking and test anxiety in math. However, performance-avoid goals did not emerge as a significant negative predictor of self-regulated learning. We hypothesized that a performance-approach orientation would be a positive predictor of test anxiety and the tendency to avoid seeking help when needed. The approach component of performance goals did not predict the avoidance of help-seeking, and although there was a weak predictive relationship with test anxiety, the avoidance component was a stronger predictor. In addition, with the other goal orientations in the equation, performance-approach goals did not significantly predict self-efficacy or self-regulated learning. The shared variance between the two performance orientations is certainly playing a role here, but it is interesting that it is the avoidance component that is more strongly related to the dependent variables.

Discussion

Although both approach and avoidance tendencies have traditionally been described by motivation theorists, the goal of avoiding the demonstration of lack of ability has not been included in most studies using a goal orientation framework. Those of us who have spent time in schools are familiar with students who seem driven by the need to protect themselves from being perceived by others as lacking ability. Covington (1992) describes students who are consumed by the need to avoid looking stupid in school. We developed a scale to assess the avoidance component of a performance goal orientation. The development of this scale is one of the major contributions of our study and we hope it will prove useful to others conducting research on achievement goals. Some of the inconsistent findings regarding the deleterious or beneficial role of a performance goal orientation may be related to this failure, in the past, to distinguish between the approach and avoidance components.

The results from our study in the field lead us to some different conclusions than those of Elliott and Harackiewicz in the laboratory. Contrasting methodologies may account for the differences. Elliot and Harackiewicz conducted experimental studies with college-age students using puzzle-like tasks; whereas our study focuses on an academic setting, specifically the mathematics classroom, with middle school students. In their experimental study, Elliot and Harackewicz found that only performance-avoid goals undermined intrinsic motivation. They suggested that both task goals and performance-approach goals "engender a host of affective and perceptual-cognitive processes that facilitate task engagement" (p.462). That is certainly the case for task goals in our current study, as well as in a number of previous studies. However, our results do not indicate that performance-approach goals are facilitative. Performance-approach goals were unrelated to academic efficacy and positively related to avoidance behaviors in the classroom and to test anxiety. Furthermore, in the regression equations, performance approach goals emerged as a significant (weak) predictor only for test anxiety. Rather than the approach/avoidance distinction, our results indicate that it is the distinction between task and performance goals that is influential. Our results confirm a basic principle of goal orientation theory -- the relative saliency of task or of self. The two components of a performance orientation make the self salient. The preoccupation with the self relative to others, whether to demonstrate ability or hide lack of ability, characterizes both goals.

No race differences emerged as main effects on any of the goal orientation scales. Although the means on both the approach and avoidance components of performance goals were somewhat higher for boys than for girls, the differences was only significant for the approach component. With our ethnically diverse sample, we did find an interaction between race and gender on task goals. African-American females displayed a greater tendency to endorse task goals than did any of the other groups. An earlier study (Kaplan & Maehr, 1996) had shown that African American students were more likely to espouse task goals than were European American students; however, our study points to African-American females as the most task-focused group. The tendency of African American students to have more "positive" attitudes and self-beliefs has

been noted by a number of investigators (e.g., Graham, 1994; Mickelson, 1990). It will be interesting to see in future studies if this finding is replicated. Studies examining differences between higher and lower achieving students in their endorsement of performance goals have not been consistent. In the current study, students with lower GPA were more likely than students with higher GPA to endorse both dimensions of performance goals. It appears that lower achieving students are particularly concerned with how their ability compares to that of others, and are thus oriented to hiding their lack of ability or to displaying their superiority relative to others.

For academic self-efficacy and self-regulated learning, a task goal orientation emerged as the strongest predictor. Ames (1992) has described the classroom structures that lead to an emphasis on task goals. It will be important in future studies to consider the relationship between the learning environment and each of these goal orientations. The strongest predictor of avoiding seeking help in the classroom was an orientation to performance-avoid goals. Avoidance goals and avoidance behaviors have received less attention in research on motivation than have approach goals and behaviors. Hopefully a reliable scale to assess performance-avoid goals will stimulate research on avoidance behaviors. We have been examining predictors of the use of self-handicapping strategies by students, or the tendency to withdraw effort so that if subsequent performance is low, circumstances rather than lack of ability can be seen as the reason (e.g., Midgley et al., 1996; Urdan et al., 1996). We expect that self-handicapping will be more strongly related to the avoidance component than to the approach component of performance goals. These avoidant behaviors are very debilitating in that withdrawing effort or not seeking help when it is needed can only lead to lower performance. Ryan and her colleagues (1996) found that the students who avoided seeking help in the classroom the most were those who needed it the most. This unsettling finding emphasizes the need for further attention to the factors in the classroom that are associated with an orientation to avoiding the demonstration of lack of ability and with avoidant behaviors. What do teachers do to encourage students to espouse avoidant goals and to use avoidant behaviors? Now that scales have been developed to assess both the approach and avoidance dimensions of performance goals, it will be possible to fine tune these studies. It will be

important to consider whether there are some school and classroom level policies and practices that are particularly likely to arouse performance-avoid goals and avoidant behaviors.

There are a number of limitations to this study. The data were collected at one point in time and therefore issues of causality or bidirectionality cannot be examined. The generalizability of the current study is also limited to early adolescent students in mathematics classrooms in middle schools. Further research should be conducted with this scale in other disciplines and with other age groups. Additionally, we acknowledge that students do not have either one goal orientation or another. They have various levels of different goal orientations. Several studies have indicated that the most facilitative pattern is high task and low performance-approach goals (e.g., Meece & Holt, 1993; Wolters et al., 1996). These studies did not include a measure of performance-avoid goals. It will be important to investigate these patterns and interactions among the three goal orientations in relation to educationally relevant outcomes in future studies.

As researchers join with educators to use goal theory as a framework for school reform (e.g., Ames, 1992; Maehr & Midgley, 1996), it becomes increasingly important to understand the relation between various goal orientations and educationally relevant outcomes. Distinguishing between the approach and avoidance components of performance goals should add to our understanding of the role of these orientations, and perhaps provide further guidelines for changing the goal structure in classrooms and schools.

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Table 1

Factor Loadings from Exploratory Factor Analysis (EFA) (N = 342) and from Confirmatory Factor Analysis (CFA) (N = 361) for Achievement Goal Orientations

Item	Performance-Avoid		Performance-Approach		Task	
Performance-Avoid Goal Scale	EFA	CFA	EFA	CFA	EFA	CFA
The reason I do math work is so the teacher doesn't think I know less than others.	.68	.92	-.07		.09	
I do my math work so others in the class won't think I'm dumb.	.72	1.08	-.08		-.02	
One reason I might not participate in math class to avoid looking stupid.	.69	.72	-.01		-.11	
One of my main goals in math is to avoid looking like I can't do my work.	.82	.83	.08		.04	
It's very important to me that I don't look stupid in my math class.	.70	.97	-.08		.02	
An important reason I do my math work is so I won't embarrass myself.	.82	.99	.06		.00	
Performance-Approach Goal Scale						
I want to do better than other students in my math class.	-.03		-.81	.99	.08	
I would feel successful in math if I did better than most of the other students in the class.	.03		-.78	.93	-.04	
I would feel really good if I were the only one who could answer the teachers' questions in math class.	-.07		-.84	.92	-.07	
I'd like to show my math teacher that I'm smarter than the other students in math class.	.06		-.76	1.02	.09	
Doing better than other students in math is important to me.	.11		-.71	1.02	-.03	
Task Goal Scale						
I like math work I'll learn from, even if I make a lot of mistakes.	.02		.05		.76	.85

An important reason I do my math work is because I like to learn new things.	-.01	.05	.87	1.02
I like math work best when it really makes me think.	-.03	-.08	.77	.94
An important reason I do my math work is because I want to get better at it.	.04	.00	.78	.75
I do my math work because I'm interested in it.	-.02	-.03	.82	.95

Table 2

Internal Consistency Using Cronbach's Alpha and Range of Factor Loadings for Full Sample (N = 703) and Subsamples

	Task		Performance-Approach		Performance-Avoid	
	Alpha	Range	Alpha	Range	Alpha	Range
Full Sample	.84	.75 - .84	.84	.77 - .81	.84	.68 - .80
Males	.83	.74 - .81	.82	.75 - .79	.84	.71 - .80
Females	.86	.74 - .87	.85	.77 - .83	.84	.64 - .82
African-American	.84	.72 - .83	.83	.74 - .82	.84	.70 - .78
European-American	.85	.74 - .85	.85	.75 - .80	.86	.68 - .83

Table 3

Descriptive Statistics and Correlation Matrix for Items in the Performance-Avoid Scale (N = 631)

	M	SD	Factor Loading	Item-Total Correlation	1	2	3	4	5	6
1. The reason I do my math work is so the teacher doesn't think I know less than others.	2.59	1.37	.74	.67	1.00					
2. I do my math work so others in the class won't think I'm dumb.	2.44	1.39	.78	.61	.53	1.00				
3. One reason I might not participate in math class is to avoid looking stupid.	2.05	1.28	.68	.67	.36	.43	1.00			
4. One of my main goals in math is to avoid looking like I can't do my work.	2.50	1.39	.74	.53	.45	.49	.39	1.00		
5. It's very important to me that I don't look stupid in my math class.	2.65	1.41	.73	.60	.49	.53	.37	.45	1.00	
6. An important reason I do my math work is so I won't embarrass myself.	2.24	1.33	.80	.62	..49	.53	.49	.50	.51	1.00

Table 4
Descriptive Statistics and Correlation Coefficients for Variables in the Study (N = 525)

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Task	3.27	1.07	1.00									
2. Performance-Approach	2.81	1.14	.04	1.00								
3. Performance-Avoid	2.42	1.03	.01	.56**	1.00							
4. Test Anxiety	2.76	1.00	-.01	.32**	.41**	1.00						
5. Avoid Help-Seeking	2.45	.94	-.27**	.28**	.40**	.40**	1.00					
6. Self-Regulation	3.56	.82	.63**	.07	-.01	.13**	-.31**	1.00				
7. Self-Efficacy	4.09	.86	.43**	-.01	-.11*	-.12**	-.37**	.58**	1.00			
8. Prior Achievement	8.03	2.71	-.02	-.11*	-.14**	-.18**	-.17**	.02	.19**	1.00		
9. Gender			.05	-.08	-.08	-.01	-.10*	.05	.05	.12**	1.00	
10. Race			-.09*	-.06	-.05	-.12**	-.04	-.10*	-.03	.16**	-.05	1.00

*p < .05. **p < .01

Note. Coding for dichotomous variables: Gender: Male = 0, Female = 1

Race: African-American = 0, European-American = 1

Table 5

Hierarchical Regression Analyses (Beta Values) Predicting Four Outcomes in Math (N = 525)

	Self Efficacy		Self Regulation		Avoid Help-Seeking		Test Anxiety	
Step 1								
Prior Achievement	.20***	.19***	.03	.04	-.16***	-.11**	-.19***	-.14***
Gender	.02	-.01	.04	.01	-.08	-.04	.01	.04
Race	-.06	-.03	-.10*	-.05	-.02	-.03	-.09	-.07
Step 2 - Goals								
Task		.43***		.62***		-.27***		-.02
Perform.-Approach		.06		.07		.09		.12*
Perform.-Avoid		-.13**		-.05		.33***		.32***
R Square	.04	.24***	.01	.40***	.03	.25***	.05*	.20***
Change in R Square	--	.20***	--	.39***	--	.22***	--	.16***

*p < .05. **p < .01. ***p < .001

APPENDIX

Math Performance-Avoid Goal Orientation
(6 item scale, alpha = .84, skew = .39)
The reason I do math work is so the teacher doesn't think I know less than others.
I do my math work so others in the class won't think I'm dumb.
One reason I might not participate in math class is to avoid looking stupid.
One of my main goals in math is to avoid looking like I can't do my work.
It's very important to me that I don't look stupid in my math class.
Am important reason I do my math work is so I won't embarrass myself.

Math Performance-Approach Goal Orientation
(5 item scale, alpha = .84, skew = .22)
It's important to me that the other students in my math class think I am good at my work.
I would feel successful if I did better than most of the other students in my math class.

Math Task Goal Orientation
(5 item scale, alpha = .84, skew = -.11)
An important reason why I do my math work is because I want to get better at it.
An important reason I do my math work is because I like to learn new things.

Math Self-Efficacy
(6 item scale, alpha = .85, skew = -.79)
I'm certain I can master the skills taught in math this year.
No matter how hard I try, there is some math work I'll never understand. (Reversed)

Math Self-Regulation
(6 item scale, alpha = .76, skew = -.15)
When I run into difficulty doing a math problem, I go back and work out where I went wrong.
When other students are distracting me in math class, I often find a way to keep concentrating on my work.

Math Test Anxiety
(4 item scale, alpha = .68, skew = .15)
When I take math tests, I worry a lot about items I can't answer.
During math tests, I think about how other students are doing.

Avoiding Help-Seeking in Math
(6 item scale, alpha = .79, skew = .36)
I don't ask questions in math class, even when I don't understand the lesson.
If my math work is too hard for me, I just don't do it rather than ask for help. (Reversed)